

CONCENTRATED FORMS OF INDIVIDUAL
DWELLINGS: A PRELIMINARY REPORT

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May, 1983

"When a man rides a long time through wild regions he feels the desire for a city. Finally he comes to Isidora, a city where the buildings have spiral staircases encrusted with spiral seashells, where perfect telescopes and violins are made, where the foreigner hesitating between two women always encounters a third, where cockfights degenerate into bloody brawls among the bettors. He was thinking of all these things when he desired a city. Isidora, therefore, is the city of his dreams: with one difference. The dreamed-of city contained him as a young man; he arrives at Isidora in his old age. In the square there is a wall where the old men sit and watch the young go by; he is seated in a row with them. Desires are already memories."

Italo Calvino: *Invisible Cities*

It is difficult to write, or at least to start writing about a certain type of construction without considering it in a wider historical as well as modern context of the development and shaping of the human environment. This is especially true in the case of housing, which has always constituted the major part of every human settlement, representing its biggest, almost medical problem and, at the same time, serving as

an important generator of form and image. Although the cities were born and developed according to the purposes, reasons and forces that formed and widened their arteries, the relations and sizes of parts had to be adjusted to the make and type of housing. Taking into account that interplay of housing as one of the contents, and settlements or cities as the resulting form, I've tried to explore one of the possible kinds of dwelling: the concentrated forms of individual houses. My interest in those types arises from their specific character: they represent an intermediate form and, therefore, a link between the usual detached individual houses and condominium buildings. The fact that they have the characteristics of both types widens their possibilities of application, but at the same time, it creates complexity: as the advantages overlap, so do the weaknesses. From that standpoint probably the most interesting of their characteristics is that, while functioning as individual houses by virtue of their concentration they form firm urban entities, type of collective dwellings. That is why sometimes it is difficult to draw a line between certain types in the matter of property treatments and the morphological and typological categorization. The problem of differentiating within the category is similar because one finds variations according to the application of different criteria such as the already mentioned property relations, building codes, morphological elements and so on.

Perhaps the best solution is to take into account all criteria, to see where they correspond and where they differ, in order to crystallize our understanding of the variants. The aim of this study is to cast some

light on all the aspects of these constructions including their origins, their rationale and their eventual consequences in terms of shaping the environment and, at the same time, initiating human contacts and modes of behavior.

Considering the complexity of the category, a complete study would have to comprise a wide range of components starting with historical and vernacular characteristics and including current problems of housing and city growth, the crisis in their relationship. The purpose is not to advocate these types but to fully analyze their advantages and weaknesses, and the purposes, causes and consequences of their application. Today, as we witness the re-evaluation of previously unquestioned values of modern architecture and international style, it is perhaps, necessary to reconsider certain categories as well.

According to the teaching of modern architecture, scholastic examples of concentrated forms of individual houses are atrium, row-house, and terraced housing (for slopes).¹ The advocates of these forms have tried to present them as a solution to suburban sprawl and a way of curbing the expansion of indistinguishable tracts of detached housing. Using these higher densities and condensed individual housing would also have enabled sociability and possibilities of meeting and communication between people in the common areas formed by these types. At the same time the quality of privacy produced by atrium-carport construction was emphasized.² One of the typical technically oriented studies of that period, very well elaborated in the sense of typology (and for that reason frequently

quoted), was the study by the German architect, Meyer-Bohe.³ He starts by underscoring the fact that it will be necessary to double the housing volume by the year 2000.

In order to cover his deductive approach leading to an answer he already knew, Meyer-Bohe analyzes the advantages and disadvantages of different variants. Despite the possibility of reaching high densities, he rejects so called 'big projects' with a vertical mode of putting units together because of their "inhuman scale, causing social and traffic problems." Low densities with detached family houses are "destroying rural areas" so he sees a compromise solution in medium densities with the units put up together. The curiosity is that he considers the idea of a row house 'originally boring' and makes his choice for carpet construction which, by its possibility of free allocation, "forces differentiation and self-identity of inhabitants with their place of living." By that statement, Meyer-Bohe unconsciously remains in the same area he is criticizing, because the mode of construction he is arguing for is, by its approach and principles, analogous to the mode of usage and placement of the multi-story buildings. Teaching elements of modern architecture, such as the strict separation of pedestrian and vehicle traffic, common central areas and neglect of the street, are present. Together with the creation of green surfaces around the buildings, we come to the 'erosion of urban space.'⁴

Meyer-Bohe's typology is quoted and further developed by Hubert Hoffmann who already suggests his stand in the title of his work.⁵ Hoffmann brings out a lot of relevant statistical and other data about

carpet-construction but, at the same time, his arguments rest on subjective assumptions which he tries to justify on the basis of naive socio-psychological facts. Again the strongest argument is a frustration with high-rise buildings that surrounds people on all sides, underscoring the necessity of a linkage with the ground and one's own garden - not too big (as in the case of detached individual dwellings) to avoid maintenance problems. The importance of a private garden is emphasized in the case of families with children. These and similar theories have been repeated up to the present moment. Their common characteristic is a thorough description of the category from the technical point of view and, on the other hand, a lack of socio-historic and firmer economic analysis.⁶

Together with greater attention to the historic and vernacular component, some studies try to include historical surveys as justification for concentrated forms.⁷ Specialized studies relating to certain types of terrain are also brought up.⁸ A recent analysis by Harold Deilmann on a theme of different types of housing is an exception as it attempts to find quantitative and objective data for all categories.⁹ It is partly based on exact mathematical measuring trying to derive data for each type out of the general results.¹⁰ Taking into account the statement of the demographic explosion in the advanced western countries and the current phase of demographic transition where the city population is being restructured to reflect changing urban activities, Deilmann thinks that we have reached the end of the period of construction of entire new cities or quarters. The obvious inadequacy of those rapidly growing cities give rise to the necessity for careful adaptation and improvement of the

existing urban areas and housing stock as a new future development. The demands for this interpolation into the existing structure and contextuality are gaining weight under those circumstances and they are certainly influencing different types of housing.

If one tries to summarize this short survey of literature on the theme of concentrated housing, the conclusion could be drawn that, in the framework of such technical and practical studies, the forces of general movements, mistakes and dilemmas of modern architecture and town planning thought are seen. The idea of condensed building ('clusters') has been shown, after the first wave of 'moderne', as an attempt at further development both on several levels and in different forms. Very often those were utopian megastructures of enormous dimensions¹¹ built on the belief in the self-sustaining nature of modern architecture. Later attempts and derivations seek a compromise between the necessity for individual expression and diversity with the and the unavoidable reliance on large structure,¹² while some more realistic forms, two-dimensional in principle, are developing parallel to this movement.¹³

The reflections of some of them can be followed in the studies of Meyer-Bohe and other advocates of carpet-construction. Deilmann's ideas are based upon the historically-negativistic standpoint of the 'moderne' but at the same time, are influenced by some new approaches in planning where the possibilities of comprehensive planning are being derived and a policy of 'short steps' is argued for. Those are especially characteristic of western systems, particularly of the United States, where implementation of plans, due to different interests and the power of certain groups of people, sometimes becomes almost impossible. Together with the process of

restoration of the cities and the revitalization of their quarters, the conflicts are accelerating and sharpening. Numerous directions in planning are trying to find answers for these problems;¹⁴ the most interesting to us should be the policy of incrementalism. It argues for intervention, according to the situation and trying to respect the forces of spontaneous development. Charles Jencks¹⁵ finds the beginnings of incrementalism in the early philosophical thoughts of the modern western civilization philosophers, especially those of Karl Popper.¹⁶ That is why he is trying to present it as the essence of the system. The theory of implementation as a planning category is best elaborated by Charles Lindblom¹⁷ while its practice aspects are described by Robert Venturi¹⁸ in his attempt to justify suburbia sprawl as a spontaneous and logical process.

Despite the differences among countries or systems, there are strong similarities in demographic movements, the development of urban thought in general and with reference to the necessity for new construction and the reconstruction of existing areas, and in the demands for a careful consideration of the historical context at both the general and specific levels. If one surveys studies on that subject, the impression is that historical development and modern typology are often very superficially connected, mostly by way of illustration.

One of the exceptions is the approach of Sibyl Moholy-Nagy¹⁹ who, without losing the linkage of housing types and settlement forms, finds five archetypes of historical cities (geomorphic, concentric, orthogonal-connective, orthogonal-modular and clustered) within which she searches for specific types of housing units. This complex analysis is not based on

simplistic or simply untrue categories such as "orthogonal Roman city" or "organic and disordered medieval city," but describes different forms in different (or the same) periods in relation to social, cultural, religious, topographic, climatic and other factors. Very often it is difficult to separate two types clearly and firmly. The rationales for forms within the same type can also be different.²⁰ Concentrated forms of individual housing can be found in all archetypes observed and their form and manner of use reflects the archetype form. Speaking of the chronological order, it may be concluded that the atrium house is the oldest of those types probably because the first great civilizations originated in favourable climatic conditions. Atrium houses vary in form and size depending on the settlement's form and purpose: congested and small units in the residential section of Ur in Mesopotamia are different from the regular orthogonal layout with the central patio of the Roman villa. Although the attached housing units of the geomorphic and concentric structures are sometimes considered row housing, the first planned blocks can still be found in Paris where Henry IV, in 1606, raised the first government housing projects at the Place Dauphine.²¹

This French influence later spread to England, especially after the great fire in 1666, where it led into the rebuilding of new residential streets according to the continuous elevation principle. Housing units were adjusted to the form, dimension and block facade as a prime element of the orthogonal-linear archetype. With the development of American cities this design of street blocks as single buildings is imported from Georgian

England and used together with specific types of detached individual houses, to create that "synthesis of Europe and America, of the garden and the woodland, of the street and the savannah" - as the American architecture historian Vincent Scully puts it.²²

Moholy-Nagy identifies clustered types with satellite towns, considering it a characteristic product of the 20th century, despite her own statement that it is as old as cities.²³ She defines them as a monofunctional category (predominantly housing) in the vicinity but not part of stronger entities. Using the term 'clusters' in this way can produce a lot of misunderstanding in any attempt at a comprehensive systematization. Moreover different authors use the same term in different ways and at different levels.²⁴ In addition to this, the identification of satellite towns as the only way of planning in the period of modern town-planning - which was the result of Ebenezer Howard's (1898) garden cities influence²⁵ -- is a simplification of the problem and also a misinterpretation of Howard. Garden city, as he puts it, is not only a cluster of residential dwellings but an attempt at a comprehensive theory of the future human settlement's development, anticipating in an empiricist and perhaps a slightly primitive way Christaller's later, more scientific theory of centrality.²⁶ The garden city movement is, in fact, linked with the British Arts and Crafts period which is, as Kenneth Frampton notes,²⁷ an "urban dispersal with rural colonization and decentralized government...with a balanced combination of industry and agriculture." The scheme of Letchworth, as the first realization, couldn't be more apart, Frampton believes.

Besides, the roots in and direct influences of modern urbanism are diverse. The beginnings of horizontal zoning and the separation of functions are much easier to notice in Tony Garnier's *Le Cite' Industrielle* (1904) especially if we know about the author's meeting with Le Corbusier at Lyon in 1908.²⁸ It is difficult to determine the exact starts and fix years; the influences overlap one another. It could be said that the ideas of the early Bauhaus sanitary urbanism, which grew out of German Werkbund (which itself was searching for inspiration in Arts and Crafts movement), and projects like Le Corbusier's *L'Unite' de Habitation* at Marseille, have largely contributed to this situation. Around 1930 "the desintegration of the street became unavoidable."²⁹ Planning is trying to separate the pedestrian and vehicle traffic, and housing is organized in isolated buildings surrounded by vegetation. This process is a result of the whole moderne doctrine and it would be impossible to restrict it only to the formation of satellite towns, as Moholy-Nagy argues.

Under the exposed constellation of events the way and direction of concentrated individual housing development is only one part of the general trend. Otto Haesler, whom Frampton considers one of the pioneers of "Zeilenbow" or the row-house,³⁰ in 1923 designed his building near Hannover according to the Heiligenthal principle of Walter Gropius concerning the optimal distance between buildings for maximizing the sun's penetration and ventilation. This approach is further developed by Ernst May who, as the chief architect of Frankfurt since 1925, was in a position to adopt it widely. High density in these forms, analyzed and advocated by Meyer-Bohe, Hoffmann and others, grew in the sixties under the general

movement for lower buildings and respect for appropriate scale.³¹ Ways in which concentrated housing appear in that period are different. The search spread out in many directions as with research into collective housing and city development in general. This, and further connections, dilemmas and delusions, came together as a critique of not only the post-modern movement but many studies which treated the question of housing as well as the further development of human settlements from different aspects. In that concern it is necessary to mention the name of Christopher Alexander, a man whose whole opus, together with the establishment of the Center for Environmental Studies at Berkeley, California, has been devoted to it. The range of his research is wide and based on an integration of mathematically exact disciplines and environmental studies. In one of his first works, he explains crises and the impotency of modern forms by the fact that they are products of so called "selfconscious society."³² On the other side he describes the characteristics of an "unselfconscious" tribal community which is stable, with a firmly set tradition and with gradual improvements in their development as a result of an experience accumulated through long periods of time.³³ According to Alexander that quality of stability has disappeared in selfconscious systems and reactions to mistakes are not direct any more. Therefore he is trying to find a universal solution that will enable designing forms acceptable in a given context. By using the mathematical theory of sets, a problem disaggregated into elements is overlapped with a realization in the form of a diagram. It can be argued that the given comprehensive system - solution contradicts the idea of incrementalism implicit in unselfconscious

society. Any way, with this and later works, Alexander originated an entire direction of parametric design which later created a foundation for the New Bauhaus (1955-1968) under the leadership of Thomas Maldonado.³⁴

With his last study about an "eternal way of building,"³⁵ no matter how poetical and interesting, Alexander is further away from reality than ever. His statement is that we all need to achieve a way of building with universal and eternal qualities. By adopting a common language, explored in detail in a separate study,³⁶ some sort of a common conscience would be formed enabling everyone to build in a timeless way."

If it's difficult to believe in the feasibility of those statements, a symptomatic fact is that they are appearing; together with the other attempts at an essential change in shaping the environment, they are a witness to crises in building construction and housing as well.

Concrete and practically biased, and more real and useful for that reason, is a study by John Turner focused on the problems of housing.³⁷ In giving the opportunity to build for everyone it is congruent in some ways with Alexander, but it is predominantly based on socio-economic principles. Knowing the problem of illegal construction in South America, especially in Peru, Turner finds out that some of its qualities could be adopted in a capitalistic economy, particularly in the United States.³⁸ His main suggestion is oriented to the maximization of resources by a different way of organization which would include the future uses. He is also opposing material values to the quantitatively hardly expressed use values. In his conclusion Turner raises three necessary principles of future housing policy: self-management in housing, adequate technology and planning through limits ("pre-scriptive rather than pro-scriptive laws")

and in that way making the subject especially interesting for the Yugoslavian system which is organized according to self-management principles in its totality. Turner's study can't be considered just a critique of the American housing market. It also describes the satisfaction of the barriade's inhabitants and the vitality of the formed environment. The example of barriades is not offered only as an economic recipe but also as one of the ways of solving social, technological and esthetic problems in housing.³⁹

If one tries to find some parallels between the United States and Yugoslavia they are quite obvious in Turner's work. For example the enormous quantity of illegal individual dwellings in the suburbs of bigger cities and at the Adriatic coast. Investigators and surveys done in the process of making plans for the areas partly attached by the illegal constructions showed that their inhabitants didn't want to move into new "comfort" condominiums, not even under extremely good conditions.⁴⁰ Although sometimes with minimal facilities, houses shaped through successive growth and adaptation to needs become a pleasant and cheap form of living and often a good example of, so called, marginal architecture.

In terms of technology, Turner tries to prove the inefficiency of prefabrication in its existing form recalling some earlier, more intuitive statements by John Habraken whose first studies also try to find new system-solutions in the spirit of the new period of human development.⁴¹ Habraken raised his questions at a time of similar attempts to make a radical change in shaping the environment, such as the work of Yona Friedman or similar statements by the Japanese architect Fumikiko Maki about the

collective form,⁴² and the complete movement of megastructures and Japanese metabolists as well. The difference is, though, that Habreken is not offering a concrete recipe in a defined form but is trying to lay down a theoretical base for further explorations of the possible alternatives to standardized mass production. According to Habraken, the solution lies in connecting machine production and the natural relationship of people and the environment. The infrastructure and some sort of a support construction should be provided in which different dwelling units would be filled in, chosen depending on the taste and needs of a consumer in the way "kitchen elements" are bought. With this attempt at a contact between the producer and the consumer - and with finding the right place for mass production - Habraken is announcing first principles of which today are very important for the participation of the citizenry.

It is hard to imagine massive and rough constructions which are waiting for dwellings to be filled in as a visual curative for the uniformity and depressiveness of mass housing,⁴³ but the principle seems to be much more realistic in terms of individual concentrated forms. In that case there are no problems of supporting elements, the units are mutually juxtaposed on the ground - made of concentrated individual houses which, combined with Turner's postulates on planning could be perfected as possible and feasible.⁴⁴

With his first work Habraken initiated the formation of the Organization for Architecture Research - (SAR) in Eindhoven whose further publications treated the problems of "urban tissues," patterns of urban structures and typology of the units. Their publication in 1973 dealt only with a

method⁴⁵ and it has been followed with separate studies on its application. A study on possible densities is especially interesting to us.⁴⁶ On the basis of the existing tissue exploration, and the typology and dimensions within the name in this case, typical Dutch row-housing, models for future constructions are made. A model or "tissue" contains forming principles, directions and restricting factors of a development and it's possible to apply it in all types of housing and city construction in general. The means of realization of particular units is also open; it could be a part of a coordinated construction of entire blocks according to commonly fixed principles or it could be left to individual building of each unit. Mathematical possibilities of tissue transformation and deformation enables adjustments in various situations. Together with the contextual approach of fitting into an existing structure, this method is universal in its principle.⁴⁷

In his later work at MIT, Habraken has applied and improved on a method dealing with concrete issues⁴⁸ and, at the same time, has adapted those issues to the computer for analyzing specific problems.⁴⁹ The practical utility is great because it enables reading the number of units, percentage of built ground (floor area ratio), densities and other urban data at any stage of the project.

Habraken's research is one of the sign-posts towards the betterment of housing and its is especially interesting in the area of concentrated individual houses where the possibility of participation is more feasible relating to direct and separate ownership of housing lots. The methods found in it could respond to the demands for a contextual and participatory approach, originated as a critique of modern town-planning results,

transposing into practice and, at the same time, building a large number of units.

Most probably similar attempts at designing models, open enough to embrace their adoption in different situations and surroundings, would give technical bases for different paths in housing development and the possibility usefully incorporating relevant urbanistic data. Received results would be filtered in socio-psychological notions which are elements which have often been neglected or misinterpreted in the period of 'modern.' That is especially true in the case of different housing density explorations, something which influences human behavior to a great degree. The psychologist Irwin Altman underlines the necessity for an inter-disciplinary planning and behavioral science, giving some conditions for it.⁵⁰ His research is focused on the examination of privacy and personal space. Altman exposes density categories (such as the density in an apartment and outside housing density, etc.) and their influence on behavior. Speaking about a hidden dimension of culture Edward Hall explores this problem in the behavior of ethnic groups in a given surrounding.⁵¹ The fact is, though, that a bigger number of similar studies based on the examination of a concrete problem is still missing.⁵² With today's trend for city recon-structures and an 'inclusive approach' to the solution of problems, as Jane Jacobs understands it,⁵³ the sociological aspect becomes even more important. Concerning studies about the behavior of different groups in relation to their origins, way of life, material status and ethnic belonging (a problem especially important in the United States because of a heterogeneous ethnic structure), more accurate conclusions could be

drawn because studies and data are numerous. American sociologist Herbert Gans is equally preoccupied with the problems of new settlements (Levittown) and analyses of old city sections and slums.⁵⁴ In his study of the North End, besides some disagreements, he provides a lot of scientific confirmation for Jane Jacob's thesis.

If we try to find some of the reflections of inclusive theories in physical planning, then there are Robert Venturi's town-planning proposals and, in the case of concentrated individual houses, very illustrative is the work of Earl Carlin and Peter Millard in New Haven. Robert Stern emphasizes the quality of their intervention in an existing neighborhood and underlines their sense of responsibility for the place and profile of users.⁵⁵ The example expressed is in fact row-housing built out of standardized cheap materials appropriate to the demands of the program and area characteristics.

Future research on concentrated individual houses should be focused on the synthesis of all mentioned aspects. Taking into account the problems of code regulations, technology, design, and the socio-psychological, historical and economic context. This should enable a crystallization of possible solutions. Because of very complex facts and not always simple truths it would be a mistake to expect a single answer or a final formula. The field is teaching us to leave possibilities open for all different ways of concentrated and other housing, in a typological sense, as well as in the sense of development, organization and realization. The efforts should therefore be directed to an efficient and appropriate usage of different categories.

FOOTNOTES

1. This is only a typological and morphological classification. Property and legal considerations would cause some differences and . According to the regulatory codes of most European countries (West Germany, for instance), as well as Yugoslavia, the property rights of the house and the attached plot is regarded as a projection perpendicular to the ground. In the case of terraced houses, these projections overlap so the property regulations are made according to the rules for condominium housing.
2. Classical statements on the subject were expressed by Serge Chermayeff and Christopher Alexander in Community and Privacy. They tried to explain the human need for community and sociability but also for the possibility of escape into the enclosed privacy of one's apartment and garden.
Source: Chermayeff, S. & Alexander, C. (1963): Community and Privacy, New York, Doubleday.
3. Meyer-Bohe, W. (1979): Wohngruppen, Stuttgart, Koch.
4. This term is used by Rob Krier in his critique of modern architecture and his argument for some sort of a combination of a linear city (as a link between central cities) and an attempted reaffirmation of Camilo Sitte's thesis on medieval urban spaces. Despite an attractive illustration of the necessity for a contextual and evolutionary approach, Krier is in fact also arguing for architectural determination, not less than that of Le Corbusier and other pioneers of the modern style.
Source: Krier, R. (1979): Urban Space, New York, Rizzoli.
5. Hoffmann, H. (1967): One Family Housing: Solutions to an Urban Dilemma London, Thames & Hudson
6. A typical example is a study by the American authors Untermann and Small who present a very well-elaborated typology and related building densities that provide a useful orientation to these issues.
Source: Untermann, R. & Small, R. (1977): Site Planning for Cluster Housing, New York, Van Nostrand Reinhold.
7. In his historical survey, Vittorio Chiaia tries to include an analysis of the suburban phenomenon, the causes of its appearance and possible solutions.
Source: Chiaia, V. (1979): L'Alternativa Tipologia. (chapter: "Origine della periferia"), Bari, Dedalo
8. Abbott and Pollit analyze a case of construction on a slope by connecting it to some regional characteristics, with an accent on British historical hill towns.

Source: Abbott, D. & Pollit, K. (1981): Hill Housing, New York, Whitney Library of Design

9. Deilmann, H.; Bickenbach, G. & Pfeiffer, H. (1977): Wohnbereiche, Wohnquartier, Stuttgart, Karl Kramer Verlag.
10. The attempt to use mathematics in architecture and town planning is a permanent preoccupation of British authors Lionel March, Philip Steadman and Sir Leslie Martin. The data Deilmann quotes can be found in: Martin, L. & March, L. ed (1972): Urban Space and Structures. Cambridge, University Press.
11. The Japanese metro list movement and 'clusters in the air' by Arata Isozaki (1962) are symptomatic.
12. The most interesting and frequently quoted is the study by Yona Friedman (1975): "Toward a scientific architecture," Cambridge, The MIT Press.
13. The variants in which they are showing up are different, from the surface structures by Candilis, Josie and Woods to the Dutch structurism by Aldo Van Eyck and Herman Hertzberger. Charles Jencks explains their direction of development in detail.
Source: Jencks, C. (1973): "Modern movements in architecture," New York, Anchor & Doubleday
14. The theory of Melvin Webber about advocacy planning - the representing of certain groups in the process of planning, is one of the most influential.
Source: Webber, M. (1963): "Order in diversity: Community without propinquity" in "Cities in Space," Baltimore, Lowdon and Wingo ed. Together with advocacy planning the theory of implementation or the possibilities of adopting certain solutions is developed.
Source: Terry Cooper, "Bureacracy and Community Organization," Administration and Society Vol. 11 (February 1980).
Also see S. D. Alinsky, Rules for Radicals (New York, Random House, 1971); and H. Goldblatt, "Arguments for an against citizen participation in urban renewal," in H. B. C. Spiegel (ed.) Citizen Participation in Urban Development, Vol. I (Washington, D.C.: Institute for Behavioral Sciences, 1968).
15. Jencks, C. (1973): "Modern movements in architecture"
16. Popper argues that only few things could be done at the time, when the moment for them comes.
Source: Popper, K. (1962): "Open Society and its Enemies" (2 vols.) London: Routledge and Kegan Paul, First published in 1945.

17. Charles Lindblom, The Policy Making Process (Englewood Cliffs, N.J.: Prentice Hall, 1968); C. Lindblom, The Intelligence of Democracy (New York: The Free Press, 1965); C. Lindblom, "The Science of Muddling Through," Public Administration Review 14 (Spring, 1959).
18. Venturi, R.: Scott Brown, D. & Tremour, S. (1977): Learning From Las Vegas. Cambridge, The MIT Press.
19. Moholy-Nagy, S. (1968): Matrix of Man, New York, Praeger.
20. Geomorphic type, originated mainly as a response to the site conditions and being characteristic in the case of vernacular unplanned developments, can also be a result of the external forces or religious beliefs. Terraced structures of the Peruvian Incas are impressively settled into a dramatic landscape trying to communicate with the divinities.
21. "The development of the Paris river quays shows the decisive shift in orientation from a concentric cathedral city, developed centrifugally outward from the Ile de la Cite, to a linear merchant city....Paris became the birthplace of a decisive planning revolution that spread throughout Europe and North America and expressed for the first time the ruling influence of the commercial middle class."
Source: Moholy-Nagy, S. (1968): Matrix of Man.
22. Scully, V. (1969): American Architecture and Modernism. New York, Praeger
23. "City satellites are clusters of buildings that belong neither to the city nor to the village, partaking of the open land and vestiges of nature, but dependent on an imitation of city life for survival. Satellites, or, as we shall call them, exurban clusters, have existed since the beginning of cities.
Source: Moholy-Nagy, S. (1968): Matrix of Man.
24. By using it Charles Jencks is describing an understanding of a 'cluster-city' as an organism with polycentric clusters of activities, illustrating it by Kevin Lynch's approach to planning. In terms of realization he brings up the Berlin-Hauptstadt scheme by Allison and Peter Smithson where the idea is generalized to the level of the entire city.
Source: Jencks, C. (1973): Modern Movements in Architecture.
25. Howard, E. (1965): Garden Cities of Tomorrow, Cambridge, The MIT Press

26. It is not the only misinterpretation of Howard's theory. The most represented is the realization of garden cities by itself, often founded on their literal and formal interpretation. Vincent Scully emphasizes this case writing about American new towns where the radial streets, formally made according to Howard's circle diagrams are dividing instead of connecting the construction - which is not Ebenezer Howard's fault.
Source: Scully, V. (1969): American Architecture and Urbanism.
27. Frampton, K. (1980): Modern Architecture - A Critical History. New York, Oxford University Press
28. Frampton, *ibid*.
29. Rowe, C. & Koetter, F. (1978): Collage City. Cambridge, The MIT Press
30. Frampton, K. (1980): Modern Architecture - A Critical History.
31. Charles Jencks thinks that the "low rise - high density" movement is an extreme example of Allison and Peter Smithson's influence. They limit the height of a building by the height of trees as one of the orientations in scale.
Source: Jencks, C. (1973): Modern Movements in Architecture.
32. Alexander, C. (1964): Notes on the Synthesis of Form. Cambridge, Harvard University Press
33. The speed and quantity of constructions are considered one of the biggest problems of today's development. Although in a different but much more concrete context, closer to the housing problem, Rob Krier talks of the qualities of past constructions: "The logical and attractive building types and spatial structures left to us by anonymous architects have been improved upon by countless succeeding generations. They have matured into masterpieces even in the absence of a single creator of genius, because they were based on a perfectly refined awareness of building requirements using simple means; the result of an accurate understanding of tradition as the vehicle for passing on technical and artistic knowledge."
Source: Krier, R. (1979): Urban Space.
34. Lionel March, though a follower and a member of the same stream, criticizes some of Alexander's arguments brought up from almost mathematical positions in a later work, "The atoms of environmental structure" (1970). March argues that if we wanted to agree with the conclusion we would have to accept Alexander's premises as absolutely true although he feels they are personal and constructed.
Source: March, L. ed. (1976): The Architecture of Form. Cambridge, The University Press

35. Alexander, C. (1979): The Timeless Way of Building. New York, Oxford University Press
36. Alexander, C.; Tshikawa, S. & Silverstein, M. (1977): A Pattern Language. New York, Oxford University Press.
37. Turner, J. F. C. (1977): Housing by People - Towards Autonomy in Building Environments. New York, Pantheon Books.
38. "Barriades" or illegal squatter settlements in Peru have already been pointed out as an example of individual (concentrated) development also in the architecture-planning circles. Jencks describes their usual way of originating and a high organizational level:
"During the night an advance guard made up of lay-out men draws the boundaries for streets and lots. In the early morning, up to a thousand squatters arrive by truck, bus and taxi, accompanied by lawyers who have chosen suitable sites....By lunch time, when the police have managed to lose their struggle, a small town of sheds is laid out with future provisions for growth and zones for churches, clinics and other facilities."

Those settlements became so successful that the Peruvian government gave up repressing them and actually re-christened them 'young towns.'
Source: Jencks, C. (1977): Modern Movements in Architecture.
39. Kevin Lynch writes about the phenomenon of similar kinds of spontaneous development in the United States: "Little of it is built now in the United States, but isolated self-help communities of young people are beginning to appear - a way of life now explicitly chosen rather than one imposed by poverty."
Source: Lynch, K. (1971): Site Planning. Cambridge, The MIT Press.
40. One of those plans has been done for the area called Bijenik in Zagreb. The plan is still in the process of development in the Department for Town-planning at the Faculty of Architecture, University of Zagreb. It is based on a new policy of forcing the individual houses into appropriate areas because of lack of possibilities for responding to the big needs.
41. Habraken, N. J. (1972): Supports: An Alternative to Mass Housing. London, The Architectural Press.
42. Maki, F. & Ohtaka (1965): "Some thoughts on collective form" in Structure in Art and Science. ed. G. Kepes, New York.
43. One of the newest studies by SITE group is accepting this principle in a literal way, bringing it to the absurd. Huge spatial constructions are raising individual houses to the air together with gardens and greenery separating them from the ground by adding them in a vertical way.
Source: SITE (1982): Highrise of Homes. New York, Rizzoli.

44. Doxiades tried to make an exploration in that direction. He offered a possibility of independent development of different individual dwellings framed by a common concrete construction or a modular grid which enabled further growth in gradual stages.

The aim to put everything under the same denominator even in the way of a literally concrete structure is probably a derivation of spatial megastructures transposed into the field of two-dimensional construction. Source: Doxiadis, C. A. (1975): Building Eutopia. New York, Norton & Company, Inc.

45. SAR 73: "The methodical formulation of agreements concerning the direct environment," Eindhoven, 1973.
46. SAR: "Deciding on densities," Eindhoven, 1973
47.the concept of Tissue is not restricted to a specific geographical, cultural or economic situation. The notion that users should participate in the decisions about their own dwelling environment is world wide. The notion that a methodical approach to this decision process is a precondition to user participation is also becoming generally accepted."
Source: SAR 73, *ibid*.
48. Department of Architecture, MIT (1981): The Grunsfeld Variations - A Report on the Thematic Development of an Urban Tissue. Boston, Whalen Press
49. Gross, M. & Habraken, N. J. (1982): The Turtle Tissue Project. Open House, Vol. 7, No. 2/82
50. Altman, I. (1975): The Environment and Social Behavior. Monterey (California), Brooks & Cole
51. Hall, E. T. (1966): The Hidden Dimension. New York, Anchor & Doubleday
52. In the area of students condominium housing a study has been made in a new residential section near Boston. The influence of a building's physical form, position of entrances and approaching paths on a, in this case, homogeneous group of users, has been examined.
Source: Festinger, L.: Schachter, S. & Bach, K. (1950): Social Pressures in Informal Groups - A Study of Human Factors in Housing. New York, Harper & Brothers
53. Jane Jacobs was one of the first planners who argued for the respect of reality instead of trying to impose solutions from outside. By quoting the example of Boston's North End as a spontaneously revitalized quarter ("unslumming slum"), she is pointing to a need for comprehensive analyses.
Source: Jacobs, J. (1961): The Death and Life of Great American Cities. New York, Vintage Books.

54. Gans, H. J. (1968): People and Plans - Essays on Urban Problems and Solutions. New York, Basic Books.
55. Stern, R. A. M. (1969): New Directions in American Architecture. New York, Braziller.